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FROM: Terry W. Kramer
KRAMER & AMADO, P.C.

DATE: December 19, 2005

SUBJECT: U.S. Patent Application
Title: VISION BASED METHOD AND APPARATUS FOR
DETECTING FRAUDULENT EVENTS IN A RETAIL
ENVIRONMENT
Serial No.: 09/938,148
Attorney Docket No.: PHUS 010410

PAGES: INCLUDING COVER PAGE (29)

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PTO/SB/21 (02-04)

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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	09/938,148	
	Filing Date	August 22, 2001	
	First Named Inventor	Srinivas Gutta, et al.	
	Art Unit	2616	
	Examiner Name	David J. Czeka	
Total Number of Pages in This Submission	28	Attorney Docket Number	PHUS 010410

ENCLOSURES (Check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance communication to Technology Center (TC) <input checked="" type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Kramer & Amado, P.C.
Signature	<i>[Signature]</i>
Date	January 19, 2006

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For FY 2005☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$500.00)

Complete if Known

Application Number	09/938,148
Filing Date	August 22, 2001
First Named Inventor	Srinivas Gutta, et al.
Examiner Name	David J. Czekaj
Art Unit	2616
Attorney Docket No.	PHUS 010410

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Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent	50	25
Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent	200	100
Multiple dependent claims	360	180

Total Claims

Total Claims: _____ Extra Claims: _____ Fee (\$): _____ Fee Paid (\$): _____

HP = highest number of total claims paid for, if greater than 20

Indep. Claims: _____ Extra Claims: _____ Fee (\$): _____ Fee Paid (\$): _____

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3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets: _____ Extra Sheets: _____ Number of each additional 50 or fraction thereof: _____ Fee (\$): _____ Fee Paid (\$): _____

- 100 = _____ / 50 = _____ (round up to a whole number) x _____ = _____

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other: Fee for Appeal Brief

Fees Paid (\$)

\$500.00

SUBMITTED BY

Signature	<i>Terry W. Kramer</i>	Registration No. (Attorney/Agent)	41,541	Telephone (703) 519-9801
Name (Print/Type)	Terry W. Kramer	Date	January 19, 2006	

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JAN 19 2006

PATENT**IN THE UNITED STATE PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of: : Srinivas Gutta et al.
: :
For: : VISION-BASED METHOD AND
: APPARATUS FOR DETECTING
: FRAUDULENT EVENTS IN A RETAIL
: ENVIRONMENT
: :
Serial No. : 09/938,148
: :
Filed : August 22, 2001
: :
Art Unit : 2616
: :
Examiner : David J. Czekaj
: :
Attorney Docket No. : PHUS 010410
: :
Confirmation No. : 3373

APPEAL BRIEF

Mail Stop Appeal Brief Patents
Commissioner for Patents
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Alexandria, Virginia 22313-1450

Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed December 2, 2005.

I. REAL PARTY IN INTEREST

The party in interest is the assignee, Koninklijke Philips Electronics N.V. The assignment document is recorded at Reel 012122 and Frame 0390.

01/23/2006 WABDELRI 00000001 09938148 500.00 0P
01 FC:1402

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II. RELATED APPEALS AND INTERFERENCES

There are no related appeals and interferences.

III. STATUS OF CLAIMS

This is an appeal from the Final Office Action dated September 2, 2005 rejecting claims 1-9 and 13-20. Claims 10-12 stand cancelled. No other claims are pending in the application. The claims being appealed are claims 1-9 and 13-20.

IV. STATUS OF AMENDMENTS

All Amendments filed in this application have been entered. A correct copy of appealed claims 1-9 and 13-20, including all entered amendments thereto, appears in the attached Appendix.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to a vision-based method, system and article of manufacture for detecting fraudulent events in a retail environment, such as, for example, a theft or a fraudulent return of un-purchased merchandise by a *patron*.

Claim 1 (independent)

The method, as claimed in independent claim 1, comprises the steps of: capturing an image of a patron (page 6, ln. 7; Fig. 2: record 205) in a monitored area (page 8, lines 1-2 and step 310 of Fig. 3); establishing a rule defining said fraudulent event, said rule including at least one condition based upon observation in real time of an action undertaken by said patron, relative to at least one prior

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action or inaction by said patron (page 6, lines 1-3 and Fig. 2, ref. 205-210); processing at least one image of said retail location to identify said condition (page 8, lines 16-21 and Fig. 3, steps 320 & 330); and performing a defined action if said rule is satisfied (page 6, lines 3-5; field 260 in Fig. 2 and step 450 in Fig. 4).

Claim 13 (independent)

The system, as claimed in independent claim 13, comprises a memory (Fig. 1, ref. 110) that stores computer-readable code and a processor (Fig. 1, ref. 120) operatively coupled to said memory and configured to implement said computer-readable code. The computer-readable code is configured to establish a rule defining a fraudulent event (Fig. 2, field 250), said rule including at least one condition based upon observation in real time of an action undertaken by said patron, relative to at least one prior action or inaction by said patron; and to process at least one image of said retail location to identify said condition (page 7, lines 30-33).

Claim 16 (independent)

As claimed in claim 16, the computer-readable code is configured to obtain at least one image of said retail establishment (Fig. 3, step 310) and to analyze said image using video content analysis techniques (Fig. 3, step 320) to identify at least one predefined feature in said image associated with a rule defining said fraudulent event (Fig. 3, step 330), said rule including at least one condition based upon observation of a present action undertaken by said patron, relative to at least one prior action or inaction by said patron. The computer-readable code is further configured to perform a defined action if the rule is satisfied (page 6, lines 3-5; field 260 in Fig. 2; and step 450 in Fig. 4).

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Claim 19 (independent -- program code means)

The article of manufacture, as claimed in independent claim 19, comprises a computer readable medium (memory 110, pg. 5, ln. 20, FIG. 1, #110) having computer readable program code means embodied thereon, wherein said computer readable program code means comprises a step to establish a rule defining said fraudulent event (Fig. 2, field 250), said rule including at least one condition based upon observation in real time of an action undertaken by said patron, relative to at least one prior action or inaction by said patron; and a step to perform a defined action if said rule is satisfied (page 6, lines 3-5; field 260 in Fig. 2; and step 450 in Fig. 4). The computer readable program code means further comprises a step to process at least one image of said retail location to identify said condition (page 7, lines 30-33).

Claim 20 (independent -- program code means)

As claimed in claim 20, an article of manufacture for detecting a fraudulent event by a patron in a retail establishment, comprising: a computer readable medium (memory 110, pg. 5, ln. 20, FIG. 1, #110) having computer readable code means comprising: a step to obtain at least one image of said retail establishment (Fig. 3, step 310); and a step to analyze said image using video content analysis techniques (Fig. 3, step 320) to identify at least one predefined feature in said image associated with said condition (Fig. 3, step 330).

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VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A.. Claims 1-3, 13, 14, 16, 17, 19 and 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over US Patent No. 5,895,453 to Cook ("Cook") in view of US Patent No. 5,831,669 to Adrain ("Adrain").

B. Claims 5 to 9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cook in view of US Patent No. 6,654,047 to Iizaka ("Iizaka").

C. Claims 4, 15 and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cook in view of Iizaka and further in view of US Patent Application Publication No. 2004/0172260 to Junger et al. ("Junger").

VII. ARGUMENT

Appellant initially notes that, in the Final Office Action dated 09/02/2005, the Examiner found appellant's arguments persuasive and withdrew the rejection of claims 1, 3, 4 and 13-20 over Cook under 35 U.S.C. §102(b). In said Final Office Action the Examiner raised new grounds of rejection for, *inter alia*, independent claims 1, 13, 16, 19 and 20, under 35 U.S.C. §103(a), using Cook as a primary reference and relying upon newly cited Adrain as a secondary reference.

The *prima facie* test for obviousness is set forth by M.P.E.P. § 2143

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of

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success must both be found in the prior art, not in applicant's disclosure. In re Vaeck,
947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Appellant will show that the prior art references cited by the Examiner do not teach or suggest all the claim limitations, as recited in each of the independent Claims 1, 13, 16, 19, 20, and consequently in any of their respective dependent claims.

A. Rejection of Claims 1-3, 13, 14, 16, 17, 19 and 20 under 35 U.S.C. §103(a)

Claims 1-3, 13, 14, 16, 17, 19 and 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,895,453 to Cook ("Cook") in view of U.S. Patent No. 5,831,669 to Adrain ("Adrain").

Claims 1, 2, 13, 16, 19 and 20

Cook shows a system for detecting fraudulent transactions conducted by employees by analyzing polled data records 2 (see Figs. 1-2 and Col. 5:8-27). The data records shown are point of sale data (POS) 2A from cash registers (see Col. 5:12-13) personnel files 2B (see Col. 5:14-15), time and attendance data 2C for the employees (see Col. 5:18-19), and other accounting data 2D, such as over/short data and balances of individual cash registers (see Col. 5:22-25). "The four categories of data records 2A, 2B, 2C and 2D are processed by data extraction process 10 to render data extracts 12 ... for later processing by LPM Engine 6." (LPM=Loss Prevention Management System of Cook; See Col. 4:18-20, Col. 5:31-33 and Col.5:36-38.)

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Cook shows that the data extracts 12 are sorted into suspect categories of records (Col. 5:45-46). The suspect categories of records are shown as selected sales (e.g., credit card, see Col. 5:49-52), merchandise returns (Col. 5:55-56), employee purchases (Col. 5: 62-66), post-voided transactions (Col. 5:66-67), no sales (Col. 6:12-14), time and attendance records (Col. 6:18-19), and weekly summaries (Col. 6:24-25). *All records* used by the loss prevention management system of Cook are *cash-register detected or employment records* (e.g., attendance, etc.). Importantly, none of the rules for suspect categories are established from the records, and the records are only non-image based. The suspect categories are pre-established and only non-image records are analyzed to determine if a given record falls into the suspect category.

While Fig. 11 of Cook does show the use of a video camera, it is only used for "verification of *employee theft after* designation of suspect transactions through the LPM" (see Col. 13:18-22) (emphasis added).

The combination of steps of the method of Claim 1 for detecting a fraudulent event by a patron in a retail establishment are not anticipated or made obvious by the teachings of Cook. For example, Cook does not provide a method for detecting a fraudulent event by a patron in a retail establishment, that amongst other patentable elements, comprises "establishing a rule defining said fraudulent event, said rule including at least one condition based upon observation in real time of an action undertaken by said patron, relative to at least one prior action or inaction by said patron; processing at least one image of said retail location to identify said condition." see Claim 1, and as substantially set forth by each of Claims 13, 16, 19, and 20. The Examiner cites Cook, Col. 13:16-35, for showing this feature; however, reliance on this section in Cook is misplaced because, as

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discussed above, this section only teaches or suggests verification of a fraudulent event after designation of a suspect transaction.

The Examiner relies upon Adrain (Col. 3:14-51 and Col. 4:14-51) for showing "monitoring a patron." However, this does not cure the above deficiencies in Cook. Adrain only teaches a "facility monitoring system" using comparisons between a previously-stored reference image and a newly recorded image to detect the presence or movement of an unwanted object or person within a monitored area: "The alarm signal can include an image of the space, an identification of the space or the object, the time of the signal, or any other signal indicating that the comparison criteria have been met or not met." (Col. 4:36-39) Adrain does not teach the steps of "establishing a rule defining said fraudulent event, said rule including at least one condition based upon observation in real time of an action undertaken by said patron, relative to at least one prior action or inaction by said patron; (and) processing at least one image of said retail location to identify said condition" as claimed in claim 1 of the present application and as set forth by each of Claims 13, 16, 19, and 20.

The Examiner argues in the Advisory Action dated 11/29/2005 that Adrain discloses in Column 4, lines 32-37 "the rule including at least one condition based upon observation in real time of an action undertaken by said patron, relative to at least one prior action or inaction by said patron, and processing at least one image of the retail location to identify the condition." However, Adrain, Col. 4:32-37 actually reads: "a person's hand would be an acceptable stationary pattern, but a pixel pattern representing sudden movement of the hand, such as striking something, would represent an impermissible event causing an alarm." Appellant submits that this does not amount to "establishing a rule defining a fraudulent event, said rule including at least one condition based upon observation

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in real time of an action undertaken by a patron, relative to at least one prior action or inaction by said patron.” The monitoring system disclosed by Adrain *only provides an alarm* triggered by the absence or presence of a pattern in a given field of view, or by the movement of an object or person within a given field of view. Adrain does not provide for the identification of a condition based upon observation of an action undertaken by a patron relative to a prior action undertaken by said patron. In other words, Adrain compares images to identify the presence, absence or movement of an item, whereas appellant’s invention analyses successive actions by a patron to identify a behavior.

Accordingly, claim 1 is patentable over Cook in view of Adrain because all claims limitations are neither taught nor suggested.

Additionally, even if the teachings of Adrain were construed as “monitoring a patron” as the Examiner does, there is nothing in any of the cited references that suggests or provides any motivation to combine said references. Appellant submits that there is no teaching or suggestion to combine Adrain’s system for capturing and monitoring images of a facility with Cook’s method and system for detecting a fraudulent transaction committed by an employee based on cash-register detected or employment records. Cook sets forth at col. 2, ln. 19-22 that “the use of surveillance cameras ... is keyed to the *particular transaction* in issue.” This makes sense because the purpose of Cook relates to determining “the existence and frequency of suspect and illegal activity occurring at the *point of sale devices*.” See Cook at col. 2, ln. 16-18 (emphasis added). In particular, Cook seeks to address “crafty employees” that can “appropriate significant good from a company -- without detection.” See Cook at col. 1, ln. 20-22. In contrast, Adrain sets forth “a pixel representation of all stationary *objects on a shelf* in the space 14 at a selected time.” See Adrain at col. 3, ln. 55-61

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(emphasis added). Adrain provides “establishing baseline image data and subsequently *storing changes from the baseline data*.” See col. 2, ln. 52-55 (emphasis added). Point of sale locations, such as in Safeway or Walmart, notoriously provide a conveyance belt or pathway of constantly changing items for purchase. No “baseline” data may be obtained at the POS location – as opposed to a store shelf. Moreover, the constant movement of a cashier’s hand during item purchase would continually set off the alarm of Adrain because “sudden movement of the hand, such as striking something, would represent an impermissible event causing an alarm.” See Adrain at col. 4, ln. 34-36. Thus, the need for establishing baseline data and the alarm signal in response to hand movement of Adrain teaches away from incorporation into a point of sale employee monitoring system of Cook. It is respectfully submitted that the prior Office Actions have failed to present a *prima facie* case in support of combination of Cook and Adrain.

Accordingly, claim 1 is also patentable over Cook in view of Adrain because there is no suggestion or motivation to combine the references.

Furthermore, appellant submits that combining Adrain with Cook would not successfully yield the method of the present invention as claimed in Claim 1. Cook’s method relies upon a long-term analysis of an employee’s behavior based on the detection of an electronic data pattern, while Adrain’s system is supposed to trigger an immediate alarm as soon as the comparison between two images meets a pre-defined criteria. Cook’s method is adapted for detecting fraudulent financial transactions over time, while Adrain’s system is aimed at immediate detection of a physical event happening in a monitored area. Combining Adrain with Cook would not provide an image-based method for detecting a fraudulent event by a patron according to a rule, said rule including a

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condition based upon observation in real time of an action undertaken by said patron, relative to a prior action by the patron.

Accordingly, appellant submits that claim 1 is also patentable over Cook in view of Adrain because combining the cited references would not yield the claimed method.

Claim 2 depends from Claim 1 and further claims that at least one image is recorded if a rule defining a fraudulent event is satisfied. Accordingly, Claim 2 is allowable for at least the reason that Claim 1 is patentable as well as for the separately patentable elements contained in Claim 2.

Claim 13 is directed to a system comprising a memory that stores computer-readable code, and a processor coupled to said memory, which is essentially configured to execute the method claimed in Claim 1. Claim 13 is therefore patentable over Cook in view of Adrain for at least the same reason that Claim 1 is patentable thereover.

Claim 16 is directed to a system comprising a memory that stores computer-readable code, and a processor coupled to said memory, which is essentially configured to execute the method claimed in Claim 1 and is further configured to analyze the image using video content analysis techniques. Claim 16 is therefore patentable over Cook in view of Adrain for at least the same reason that Claim 1 is patentable thereover.

Claim 19 is directed to an article of manufacture comprising a computer readable medium provided with a computer program code which is essentially configured to practice the method claimed in Claim 1. Claim 19 is therefore patentable over Cook in view of Adrain for at least the same reason that Claim 1 is patentable thereover.

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Claim 20 is directed to an article of manufacture comprising a computer readable medium provided with a computer program code which is essentially configured to practice the method claimed in Claim 1 and is further configured to analyze the image using video content analysis techniques. Claim 20 is therefore patentable over Cook in view of Adrain for at least the same reason that Claim 1 is patentable thereover.

Claims 3, 14 and 17

Appellant incorporates herein by reference the arguments presented above against the rejection of Claims 1-2 under 35 U.S.C. §103(a) over Cook in view of Adrain. Claim 3 depends from Claim 1 and accordingly is allowable for at least this reason as well as for the separately patentable elements contained in Claim 3. Claim 3 further sets forth that the fraudulent event is a patron stealing an item of clothing, and that the condition to be satisfied for detection of the event is: "the patron exits a changing area wearing a different article of clothing than entered with."

Claim 14 is directed to a system comprising a memory that stores computer-readable code, and a processor coupled to said memory, which is essentially configured to execute the method claimed in Claim 1. Claim 14 further claims that the fraudulent event is a patron stealing an item of clothing, and that the condition to be satisfied for detection of the event is: "the patron exits a changing area wearing a different article of clothing than entered with."

Claim 17 is directed to a system comprising a memory that stores computer-readable code, and a processor coupled to said memory, which is essentially configured to execute the method claimed in Claim 1 and is further configured to analyze the image using video content analysis

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techniques. Claim 17 further claims that the fraudulent event is a patron stealing an item of clothing, and that the condition to be satisfied for detection of the event is: "the patron exits a changing area wearing a different article of clothing than entered with."

Appellant submits that the cited references neither teach nor suggest the subject matter of Claims 3, 14 and 17. The fraudulent event taught by Cook at Col. 6:9-11 ("An employee can list a post void, when one has in fact not occurred, and thereby pocket the money.") is an employee pocketing money and listing a post void when no transaction has actually occurred, and not "a person stealing an item" as asserted by the Examiner. The monitoring system taught by Adrain compares static images to determine if an object is missing, or if an unwanted item is suddenly present in the field of view. Adrain also discloses the detection of a movement of an object that triggers an alarm. However, contrary to the Examiner assertion, Adrain does not teach or suggest detecting a theft of an article of clothing by a patron "when a patron exits a changing area wearing a different article of clothing than entered with." Appellant submits that the settings that can be adjusted in Adrain's monitoring system (i.e. "sensitivity of the correlation," Col. 4:28-36) do not permit the analysis of a set of images in order to detect that a patron is leaving an changing area wearing an article of clothing different from the article of clothing that the patron was wearing upon entering said area.

Accordingly, appellant submits that claim 3, 14 and 17 are patentable over Cook in view of Adrain because all claim limitations are neither taught nor suggested.

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B. Rejection of Claims 5-9 under 35 U.S.C. §103(a)

Appellant incorporates herein by reference the arguments presented above against the rejection of Claims 1-3 under 35 U.S.C. §103(a) over Cook in view of Adrain as applied to dependent Claims 5-9. The Final Office Action dated September 2, 2005 relies upon Iizaka to make up for the deficiencies in Cook.

The following analysis of Iizaka relates to claims 5-9. In the Final Rejection dated September 2, 2005, the Examiner acknowledged that “Cook fails to specifically have monitoring equipment at the entrance in order to determine whether the patron returning the item entered with the item” and relies upon Iizaka to show this feature. Iizaka shows an entrance information storage section that stores “identification ID, entrance time, and entrance place” of an incoming person. However, Iizaka does not teach nor suggest detecting a fraudulent event by satisfying the condition that a patron was not carrying an item upon entering a location. Iizaka merely associates an ID code to each incoming person and adds information unrelated to the person itself, such as entrance time and place. In contrast, appellant’s invention provides for the processing of at least one image to identify any item that a patron is carrying upon entering a retail establishment and comparing said item to an item that the patron attempts to return without a receipt.

Claim 5

Claim 5 further sets forth that the fraudulent event is a patron attempting to return an item without a receipt, said event being detected by the condition that the patron has not previously been

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detected in said retail establishment. Iizaka does not teach nor suggest the condition that the patron has not previously been detected in said retail establishment as claimed in Claim 5.

Claim 6

Claim 6 further sets forth that the fraudulent event is a patron attempting to return an item without a receipt, said event being detected by the condition that the patron has been detected in an area of said retail establishment where said item is stocked. Iizaka does not teach nor suggest the condition that the patron has been detected in an area of said retail establishment where said item is stocked as claimed in Claim 6.

Claim 7

Claim 7 further sets forth that the fraudulent event is a patron attempting to return an item without a receipt, said event being detected by the condition that said patron was not carrying said item when the patron entered said retail establishment. Iizaka does not teach nor suggest the condition that the patron was not carrying said item when the patron entered said retail establishment as claimed in Claim 7.

Claim 8

Claim 8 further sets forth that the processing step further comprises the step of performing a face recognition analysis on said image. Iizaka does not teach nor suggest that the processing step

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further comprises the step of performing a face recognition analysis on said image as claimed in Claim 8.

Claim 9

Claim 9 further sets forth that the processing step further comprises the step of performing a feature extraction analysis on said image. Iizaka does not teach nor suggest that the processing step further comprises the step of performing a feature extraction analysis on said image as claimed in Claim 9.

Accordingly, appellant submits that claims 5-9 are patentable over Cook in view of Iizaka because all claims limitations are neither taught nor suggested.

C. Rejection of Claims 4, 15 and 18 under 35 U.S.C. §103(a)

Claims 4, 15 and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cook in view of Iizaka, U.S. Patent No. 6,654,047, and further in view of Junger, U.S. Patent Publication No. 2004/0172260.

Claims 4, 15 and 18

Appellant incorporates herein by reference the arguments presented above against the rejection of Claims 1-3 under 35 U.S.C. §103(a) over Cook in view of Adrain. Claims 4, 15, and 18 are dependent claims and are patentable due to base claim subject matter set forth above. Claim 4 is

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representative and sets forth "said fraudulent event being detected in said processing step via satisfying the condition that the patron wasn't carrying the item upon entering the retail establishment."

The Final Office Action dated September 2, 2005 acknowledges that "Cook fails to specifically have monitoring equipment at the entrance in order to determine whether the patron returning the item entered with the item." The Office Action relies upon Iizaka at col. 5, ln. 58 to col. 6, ln. 3 to show this feature. This assertion is respectfully traversed. By way of review, Iizaka relates to a system for "creating ... a feature vector unique to a customer on the basis of the *images* of a person picked up by cameras in a store." See Iizaka at Abstract. The Iizaka system stores "identification ID, entrance time, and entrance place" of an incoming person. *Id.* In particular, an information storage section 12a memorizes a "feature vector" on the basis of images supplied from incomer cameras 5a, 5b. See col. 5, ln. 58-64. The "feature vector" compresses a multi-dimensional image, including a person's *face* image element into a lower-dimensional feature vector. See col. 5, ln. 43-47. While an identification ID is assigned to a customer (col. 6, ln. 31-33), the system simply does not determine whether a patron returning the item entered with the item as claimed. In fact, Iizaka teaches away from item determination because "extracting section 10 extracts *only* a person's face image." See col. 7, ln. 52-56. The M.P.E.P. § 2143.03 does not permit hypothetical modifications of a reference. M.P.E.P. § 2143.03 provides:

To establish prima facie obviousness of a claimed invention, *all* the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35

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U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) (emphasis added).

Moreover, a reasonable expectation of success must be show. M.P.E.P. § 2143.02 provides:

The prior art can be modified or combined to reject claims as *prima facie* obvious *as long as* there is a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986) (emphasis added).

In short, the claimed feature of, *inter alia*, "... satisfying the condition that the patron wasn't carrying the item upon entering the retail establishment" is neither taught nor suggested.

The Final Office Action dated September 2, 2005, at page 5 further relies upon Junger at page 3, paragraph [0028]. This paragraph sets forth that "individual product identification information ..., fattered ... at the point of a sales transaction ... may be communicated to a separate location for inclusion in a general transaction database." However, Junger simply fails to show the claimed feature of, *inter alia*, "... satisfying the condition that the patron wasn't carrying the item upon entering the retail establishment" is neither taught nor suggested.

Accordingly, appellant submits that claim 4 is patentable over Cook in view of Iizaka and Junger because all claims limitations are neither taught nor suggested. Further, the proposed modification of the references is neither taught nor suggested.

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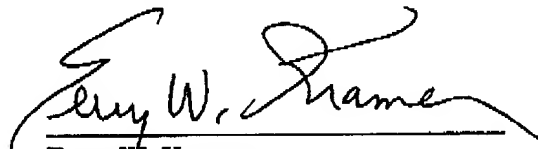
VIII. CONCLUSION

Appellant submits that all the claims on appeal are patentable because they are neither anticipated nor suggested by the cited art references. Accordingly, reversal of all the rejections and allowance of all the claims submitted on appeal is respectfully solicited.

Respectfully submitted,
KRAMER & AMADO, P.C.

January 19, 2006
Date

KRAMER & AMADO, P.C.
1725 Duke Street, Suite 240
Alexandria, VA 22314
Tel. (703) 519-9801
Fax. (703) 519-9802


Terry W. Kramer
Reg. No. 41,541

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CLAIMS APPENDIX

1. A method for detecting a fraudulent event by a patron in a retail establishment, comprising:
 - capturing an image of a patron in a monitored area;
 - establishing a rule defining said fraudulent event, said rule including at least one condition based upon observation in real time of an action undertaken by said patron, relative to at least one prior action or inaction by said patron;
 - processing at least one image of said retail location to identify said condition; and
 - performing a defined action if said rule is satisfied.
2. The method of claim 1, further comprising the step of recording said at least one image if said rule is satisfied.
3. The method of claim 1, wherein said fraudulent event is a patron stealing an item of clothing, the theft being detected in said processing step when a patron exits a changing area wearing a different article of clothing than entered with.
4. The method of claim 1, wherein said fraudulent event is a patron attempting to return an item without a receipt, said fraudulent event being detected in said processing step via satisfying the condition that the patron wasn't carrying the item upon entering the retail establishment.

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5. The method of claim 1, wherein said processing step determines the fraudulent event is said patron attempting to return an item without a receipt at a time when the patron has not previously been detected in said retail establishment.

6. The method of claim 1, wherein said processing step determines the fraudulent event is said patron attempting to return an item without a receipt has been detected in an area of said retail location where said item is stocked.

7. The method of claim 1, wherein said processing step determines the fraudulent event is said patron attempting to return an item without a receipt was not carrying said item when said person entered said retail location.

8. The method of claim 1, wherein said processing step further comprises the step of performing a face recognition analysis on said image.

9. The method of claim 1, wherein said processing step further comprises the step of performing a feature extraction analysis on said image.

(Claims 10 – 12: Canceled)

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13. A system for detecting a fraudulent event by a patron in a retail location, comprising:
- a memory that stores computer-readable code; and
 - a processor operatively coupled to said memory, said processor configured to implement said computer-readable code, said computer-readable code configured to:
 - establish a rule defining said fraudulent event, said rule including at least one condition based upon observation in real time of an action undertaken by said patron, relative to at least one prior action or inaction by said patron;
 - process at least one image of said retail location to identify said condition; and
 - perform a defined action if said rule is satisfied.

14. The system of claim 13, wherein said fraudulent event is a patron stealing an item of clothing, the theft being detected in said processing step when a patron exits a changing area wearing a different article of clothing than entered with.

15. The system of claim 13, wherein said fraudulent event is a patron attempting to return an item without a receipt, the fraudulent event being detected by said processor determining that either that patron wasn't carrying the item upon entering the retail establishment, or the patron has not been detected previously in said retail establishment.

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16. A system for detecting a fraudulent event by a patron in a retail establishment, comprising:

a memory that stores computer-readable code; and

a processor operatively coupled to said memory, said processor configured to implement said computer-readable code, said computer-readable code configured to:

obtain at least one image of said retail establishment;

analyze said image using video content analysis techniques to identify at least one predefined feature in said image associated with a rule defining said fraudulent event, said rule including at least one condition based upon observation of a present action undertaken by said patron, relative to at least one prior action or inaction by said patron; and

perform a defined action if said rule is satisfied.

17. The system of claim 16, wherein said fraudulent event is a patron stealing an item of clothing, the theft being detected by said processor when a patron exits a changing area wearing a different article of clothing than entered with.

18. The system of claim 16, wherein said fraudulent event is a person attempting to return an item without a receipt, the fraudulent event being detected by said processor determining that either the patron wasn't carrying the item upon entering the retail establishment, or the patron has not been detected previously in said retail establishment.

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19. An article of manufacture for detecting a fraudulent event in a retail location, comprising:
a computer readable medium having computer readable code means embodied thereon,
said computer readable program code means comprising:

a step to establish a rule defining said fraudulent event, said rule including at least one
condition based upon observation in real time of an action undertaken by said patron, relative to
at least one prior action or inaction by said patron;

a step to process at least one image of said retail location to identify said condition; and
a step to perform a defined action if said rule is satisfied.

20. An article of manufacture for detecting a fraudulent event by a patron in a retail
establishment, comprising:

a computer readable medium having computer readable code means embodied thereon,
said computer readable program code means comprising:

a step to obtain at least one image of said retail establishment;

a step to establish a rule defining said fraudulent event, said rule including at least one
condition based upon observation in real time of an action undertaken by said patron, relative to
at least one prior action or inaction by said patron;

a step to analyze said image using video content analysis techniques to identify at least
one predefined feature in said image associated with said condition; and

a step to perform a defined action if said rule is satisfied.

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EVIDENCE APPENDIX

Listing and copies of evidence relied upon by the Examiner as to grounds of rejection to be reviewed on Appeal:

1. US Patent No. 5,895,453 to Cook was first entered by the Examiner as a §102(b) reference in the First Office Action dated 01/26/2005, and then was relied upon by the Examiner as a primary reference for a §103(a) rejection in the Final Office Action dated 09/02/2005.
2. US Patent No. 5,831,669 to Adrain was first entered by the Examiner as a secondary reference for a §103(a) rejection in the Final Office Action dated 09/02/2005.
3. US Patent No. 6,654,047 to Iizaka was first entered by the Examiner as a secondary reference for a §103(a) rejection in the First Office Action dated 01/26/2005.
4. US Publication No. 2004/0172260 to Junger et al. was first entered by the Examiner as a secondary reference for a §103(a) rejection in the Final Office Action dated 09/02/2005.